

**M.B.B.S. SECOND PROFESSIONAL EXAMINATION, JANUARY/ FEBRUARY- 2018**  
**MICROBIOLOGY**  
**PAPER - FIRST**

[Time allotted: Three hours]

[Max Marks: 40]

**Q. 1. Multiple choice questions (attempt all MCQs in the allotted first 15 minutes in the OMR sheet) (½ x 16= 08)**

**SET - D**

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|---|---|
| <p>1. J chain is present in:<br/> a. IgA<br/> b. IgG<br/> c. Both of the above<br/> d. None of the above</p> <p>2. The organ of adhesion of bacteria is:<br/> a. Capsule<br/> b. Slime<br/> c. Flagella<br/> d. Fimbriae</p> <p>3. Gloves are discarded in:<br/> a. Blue bin<br/> b. Yellow bin<br/> c. Black bin<br/> d. Metal bin</p> <p>4. Tail tip contains two nuclei in case of microfilaria of:<br/> a. <i>Wuchereria bancrofti</i><br/> b. <i>Loa loa</i><br/> c. <i>Brugia malayi</i><br/> d. <i>Oncocerca volvulus</i></p> <p>5. Biological controls used in an autoclave are the spores of:<br/> a. <i>Bacillus stearothermophilus</i><br/> b. <i>Clostridium tetani</i><br/> c. <i>Bacillus cereus</i><br/> d. <i>Clostridium welchi</i></p> <p>6. Definitive host of <i>Echinococcus granulosus</i> is:<br/> a. Dog<br/> b. Sheep<br/> c. Cattle<br/> d. Man</p> <p>7. Which of the following is not bile stained?<br/> a. Eggs of <i>Trichuris</i><br/> b. <i>Taenia</i><br/> c. Eggs of <i>Ascaris</i><br/> d. Eggs of Hook worm</p> <p>8. Steam sterilization at 100°C for 20 minutes on three successive days is known as:<br/> a. Tyndallisation<br/> b. Inspissation<br/> c. Pasteurisation<br/> d. Vaccine bath</p> | <p>9. Di George syndrome is due to:<br/> a. B cell defect<br/> b. T cell defect<br/> c. Defect in complement system<br/> d. Defect in phagocytosis</p> <p>10. The chemical nature of an antigen is:<br/> a. Protein<br/> b. Polysaccharide<br/> c. Both a &amp; b<br/> d. None of the above</p> <p>11. Which of the following media is sterilized by inspissation?<br/> a. Blood agar<br/> b. Loeffler's serum slope<br/> c. Peptone water<br/> d. MacConkey's agar</p> <p>12. Bacterial loop is sterilized by:<br/> a. Hot air oven<br/> b. Inspissation<br/> c. Flaming<br/> d. Autoclave</p> <p>13. Clinical infection leads to:<br/> a. Active natural immunity<br/> b. Active artificial immunity<br/> c. Passive natural immunity<br/> d. Passive artificial immunity</p> <p>14. Largest trematode is:<br/> a. <i>Fasciolopsis hepatica</i><br/> b. <i>Fasciolopsis buski</i><br/> c. <i>Clonorchis sinensis</i><br/> d. <i>Schistosoma hematobium</i></p> <p>15. The heaviest class of immunoglobulin is:<br/> a. IgA<br/> b. IgM<br/> c. IgG<br/> d. IgE</p> <p>16. Delayed hypersensitivity is mediated by:<br/> a. Macrophages<br/> b. T lymphocytes<br/> c. B lymphocytes<br/> d. NK cells</p> |
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**MICROBIOLOGY  
PAPER- FIRST**

**Note:** Attempt all questions.  
Draw suitable diagrams (wherever necessary)

**Q. 2. Give reasons why:**

(1 x 4 = 04)

- Needles are discarded in metal container.
- Relapses do not occur in *Plasmodium falciparum* infections.
- IgM is known as millionaire's molecule.
- Gram negative bacteria do not retain the primary stain.

**Q. 3. Problem based question:**

(1+1.5+1.5 = 04)

A poor farmer is brought to the outpatient department with complains of easy fatigability and breathlessness. On examination of tongue, conjunctiva and skin, marked pallor is seen. Peripheral blood smear reveals marked microscopic hypochromic anemia. Stool for occult blood is positive.

- What is your probable diagnosis?
- Describe the life cycle of the parasite.
- Write the microbiological work up for the condition.

**Q. 4. Write short notes on:**

(2 x 4 = 08)

- Biomedical waste management
- Opportunistic parasitic infections in AIDS
- T cell
- Bacterial growth curve

**Q. 5. (i) Explain with a neat labeled diagram the classical pathway of complement. What are the biological effects of complement?**

(04)

**(ii) Explain with a neat labeled arrow diagram the life cycle of *Toxoplasma gondii*. Add a note on lab diagnosis of Toxoplasmosis.**

(04)

**Q. 6. Write in brief about :**

(2 x 4 = 08)

- Life cycle of round worm.
- Differences between *Taenia solium* and *Taenia saginata*
- Principle of moist heat sterilization
- Koch's postulates

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PAPER – SECOND**

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[Max Marks: 40]

**Q. 1. Multiple Choice questions (attempt all MCQs in the allotted first 15 minutes in the OMR sheet) ( $\frac{1}{2} \times 16 = 08$ )****SET - C**

1. Which of the following fungi is **not** a mold?
  - a. *Aspergillus*
  - b. *Penicillium*
  - c. *Cryptococcus*
  - d. *Mucor*
2. Microconidia are absent in:
  - a. *Trichophyton*
  - b. *Microsporium*
  - c. *Epidermophyton*
  - d. None of the above
3. Which is the spike Ag of HIV 1?
  - a. gp 120
  - b. gp 140
  - c. gp 41
  - d. gp 36
4. How many serotypes of dengue virus are there?
  - a. 4
  - b. 5
  - c. 6
  - d. 7
5. Which virus is acid labile?
  - a. Polio virus
  - b. ECHO virus
  - c. Coxsackie virus
  - d. Rhino virus
6. Diene's phenomena is observed with:
  - a. *Proteus*
  - b. *Shigella*
  - c. *Salmonella*
  - d. *Pseudomona*
7. Germ tube formation is seen in:
  - a. *Trichosporon*
  - b. *Cryptococcus*
  - c. *Candida*
  - d. None of the above
8. Which of the following fungi is dimorphic?
  - a. *Histoplasma*
  - b. *Sporothrix*
  - c. *Blastomyces*
  - d. All of the above
9. Which of the following fungi is responsible for mucormycosis?
  - a. *Rhizopus*
  - b. *Mucor*
  - c. *Absidia*
  - d. All of the above
10. When Gram negative bacteria are exposed to lysozyme the peptidoglycan layer is lost but the outer membrane remains and cells become:
  - a. Protoplast
  - b. Spheroplast
  - c. Leucocyte
  - d. None of the above
11. *Bacillus anthracis* has a proteinaceous capsule composed of:
  - a. Poly D glutamic acid
  - b. Poly D aspartic acid
  - c. Both a & b
  - d. None of the above
12. McFadyean reaction is seen in:
  - a. *Bacillus anthracis*
  - b. *B. cereus*
  - c. *B. subtilis*
  - d. All of the above
13. In viral meningitis:
  - a. Protein increases sugar and cell count decreases.
  - b. Protein increases and sugar remain normal.
  - c. Protein and glucose both increases.
  - d. None of the above.
14. For growth *Haemophilus influenzae* requires:
  - a. X factor only
  - b. V factor only
  - c. X & V factors
  - d. Neither X nor V factors
15. Which one is an enveloped virus?
  - a. Polio
  - b. Herpes
  - c. Adeno
  - d. All of the above
16. Which virus is susceptible to chloroform?
  - a. Measles
  - b. Rhino
  - c. Polio
  - d. Adeno

## MICROBIOLOGY PAPER – SECOND

**Note:** Attempt all questions.  
Draw suitable diagrams wherever necessary.

**Q. 2. Give reasons why:**

(1 x 4 = 04)

- a. In spite of being non-specific, VDRL test is done for syphilis and not TPI.
- b. In leprosy hospitals, lepromin positive persons are employed not lepromin negative.
- c. Intestinal candidiasis is seen after prolonged use of broad spectrum antibiotics.
- d. The risk of transmission of HIV is more among homosexuals as compared to heterosexuals.

**Q. 3. Problem based question:**

(1 x 4 = 04)

A 10 year old child presented with severe dehydration and passage of rice water stools and vomiting for one day.

- a. What is most probable causative organism?
- b. Which selective medium will be used for stool culture?
- c. Name one enrichment medium for the organism
- d. What is the mainstay of treatment?

**Q. 4. Write short notes on:**

(2 x 4 = 08)

- a. Lesions caused by *Candida*
- b. Window period
- c. Toxins produced by *Streptococcus pyogenes*
- d. Ty21a vaccine

**Q. 5. (i) Describe general properties of viruses. How do you classify them?**

(04)

**(ii) Enumerate 3 bacteria causing UTI. What instructions will you give to a female patient regarding collection of urine specimen for culture?**

(04)

**Q. 6. Write in brief:**

(2 x 4 = 08)

- a. Appearance of *Corynebacterium diphtheriae* in Albert stain
- b. Colony morphology of mycoplasma
- c. Make diagrams of different spirochaetes
- d. Viruses causing hepatitis